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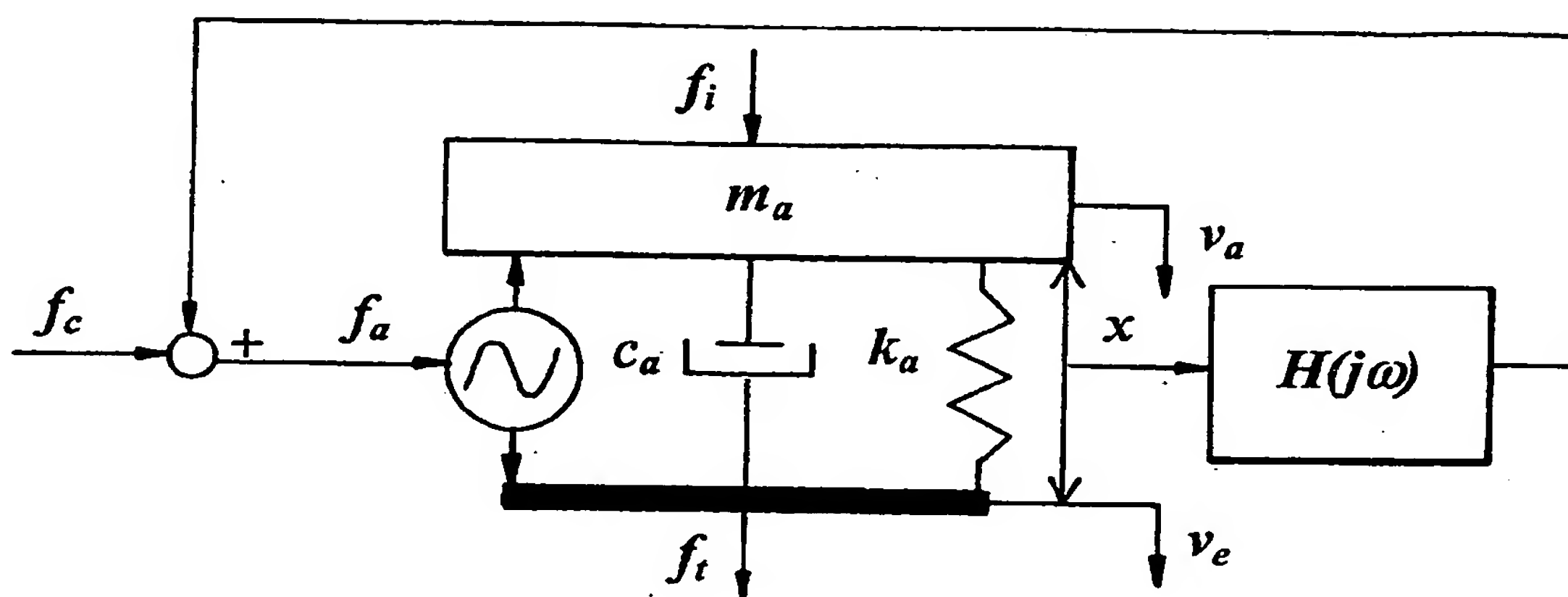
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(54) Title: **INERTIAL ACTUATOR**



(57) Abstract: An inertial actuator assembly comprises an actuator chassis adapted to be secured in use to a structure subject in use to external vibration forces, a proof mass ( $m_a$ ) supported with respect to the chassis by a proof mass resilient means, and a force generating transducer means acting between the chassis and the proof mass for subjecting in use the proof mass to a force ( $f_a$ ) applied relative to the chassis, a controller arranged to control in use the excitation of the transducer means, wherein the assembly comprises a feedback means  $H(j\omega)$  responsive to a measurement of the displacement ( $x$ ) of the proof mass relative to the chassis, the controller being arranged to modify the excitation of the force generating transducer means in response to a feedback signal from the feedback means. The feedback signal may be proportional to the displacement, the integral of the displacement, the derivative of the displacement, or to any combination of these.

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